GUIDELINES & RECOMMENDATIONS

Interim Guidance for Influenza Diagnostic Testing During the 2004-05 Influenza Season

Introduction

During the current flu season, the diminished supply of influenza vaccine could increase the demand for influenza testing; thus, this document was developed to help clinicians determine when they should order testing. Diagnostic testing should be considered when an institutional outbreak of influenza is suspected or if test results would influence clinical decision making.

Influenza Tests

A variety of tests are available to diagnose influenza. Rapid diagnostic tests have been increasingly used because they can yield results in a clinically relevant time frame, i.e., approximately 30 minutes; however, the reference standard for diagnosis of influenza remains virus culture. For a comparison of the various available tests see www.cdc.gov/flu/professionals/labdiagnosis.htm.

Most of the rapid influenza tests are approximately >70% sensitive for detecting influenza and approximately >90% specific compared with virus culture. Thus, most tests with positive results correctly identify infection, but as many as 30% of negative test results may be falsely negative. The predictive values of influenza tests depend on the level of influenza activity in the community, exposure of the patient to a contagious person, susceptibility of the patient, the characteristics of the tests (sensitivity and specificity), and the adequacy of specimen collection. Inadequate or inappropriate specimens are likely to yield false negative results. The tests are most reliable when there is known influenza activity in the community and when they are performed on patients who have signs and symptoms consistent with influenza (e.g., fever, cough, sore throat, muscle aches, headache, and malaise). However, the symptoms and signs of influenza can vary by age and underlying medical conditions, and not all patients manifest typical symptoms and signs of influenza.

Testing Outpatients for Influenza

Tests do not need to be done on all patients with symptoms of influenza. Once influenza has been documented in the community or geographic area, a clinical diagnosis can be made for patients with signs and symptoms consistent with influenza, especially during periods of peak influenza activity in the community. For individual patients seen in ambulatory care settings, tests are most useful when they are likely to help with diagnostic and treatment decisions, such as the use of influenza antiviral agents. It is important to remember that not every patient with influenza requires treatment with antiviral medication. For recommendations on the use of antiviral agents during the 2004-05 influenza season see “Influenza Antiviral Medications: 2004-05 Interim Chemoprophylaxis and Treatment Guidelines” at www.cdc.gov/flu/professionals/treatment/0405antiviralguide.htm.

Testing Inpatients for Influenza

Detection of influenza and prompt implementation of control measures is critical to the control of institutional outbreaks. When there is influenza activity in the community, clinicians should consider influenza testing, including virus culture, for patients who develop signs and symptoms of influenza while they are in a health-care facility. This should be done as part of a broader surveillance strategy for influenza as discussed in “Infection Control Measures for Preventing and Controlling Influenza

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Transmission in Health-Care Facilities," which is available at www.cdc.gov/flu/professionals/infectioncontrol/healthcarefacilities.htm.

Specimens for Influenza Testing

Nasopharyngeal and nasal swab specimens are usually preferred over other samples, such as throat swabs, for diagnostic testing because of higher quantities of detectable virus. Specimens should be collected within the first 4 days of illness. For specific details regarding specimen collection for rapid diagnostic testing, consult package inserts and the laboratory performing the test or see www.cdc.gov/flu/professionals/labdiagnosis.htm.

Alternatives to Rapid Influenza Diagnostic Tests

If rapid diagnostic tests are not available, other tests can be used to detect influenza virus infection (see www.cdc.gov/flu/professionals/labdiagnosis.htm). Immunofluorescence staining can generally yield a diagnosis in 2 to 4 hours. Virus culture is available in many laboratories and has some important advantages over rapid tests, but often does not provide results in time to help with clinical decisions such as the use antiviral drugs. A rapid test or immunofluorescence staining is the test of choice to help with decision to use antiviral medications. When such tests are not available, the decision to use antiviral medications should be made on clinical grounds rather than waiting for the results of virus culture. For more information on antiviral treatment of influenza see www.cdc.gov/flu/professionals/treatment.

Most importantly, the viruses acquired through isolation are used to characterize the subtype or strain of circulating influenza A viruses, including the degree of antigenic drift from vaccine strains, the emergence of antiviral resistance, and the presence of influenza A subtypes that show antigenic drift from the vaccine strain or antigenic shift and present a pandemic threat. Since influenza strains are continuously evolving, laboratory-based surveillance for influenza isolates is critically important to the selection of strains for the next season's influenza vaccine.